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Routine Activities and Crime in the City: Cases of working women

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Abstract

Identifying the exact routine activities of women travelers is needed by transport operators so that transport services can be offered accordingly to their needs. This paper will examine in detail the situation of trip chain, travel distance and time of travelling among female travelers in a city centre and their level of security demonstration while travelling during day time and night life. Therefore, the objective of the research is to determine the factors of trip chain, travel distance and time of travelling that affect women's travelling safety issues in an urban area.

Keywords: Routine activities; trip chain; age of travellers; time of travelling; quality of life of women travellers

1. Introduction

The way in which women's travel pattern was studied was using the theory of routine activities being introduced by Cohen (1955) and Felson (1987). Using the theory of routine activities, Cohen and Felson concluded that urban environments and social context affect the relationship between a certain type of activities and certain types of victimizations.

However the routine activities theory assumes that regularities or pattern characterize all behaviours, even accident and unexpected occurrences, making them repetitive and predictable. Felson for example noted that the study of crime is a study of accident requiring a general science of surprise. This approach suggests that daily movement and general mobility can either increase or diminish potential victimization

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and that offending may be deterred, displace or even encourage depending on certain environment and social condition.

2. Literature Review

2.1. Trip chain

Among the identified women travel pattern is the trip chain. According to Spain (1997), trip chain is being considered as a complex travel behaviour, and it is more common for women than men. The statement was agreed by Hamed and Mannering (1993) who found that males were more likely to go direct to home after work than females. They cited the role of females and the activities they pursue (e.g., shopping, personal business and recreation) as reasons for this difference. However, the study fails to fully acknowledge the significance of trip chain on women's level of safety.

To back up the study, Bhat (1997) investigated the differential impact of married and single women on trip chain. He found that married women were more likely to make stops in their commute than married men. The statement was earlier supported by previous researchers (Al-hazily, Barnes, & Coontz, 1994; Rosenbloom, 1988; strongman, Dueker, & Griffin, 1994) who indicated that compared to men, women were more likely to trip chain on the way to and from work. However, this phenomenon had not been discussed further towards the safety issues of working women traveling by public bus.

2.2. Travel distance

Another factor of women's travel pattern being identified is the travel distance made by women. All the studies review so far on this attribute suffer from the fact that it fail to consider women's feeling of safe while travelling. However the existing empirical research is unified that women have shorter commuting distance than man (White & Madden, 1977).

The underlying economic theory presented by White and Madden (1977) suggested that commute length the function of wages, housing prices, income, and other demographic variables with wages and housing prices endogenously determined. White (1986) also believed that given identical education, skill level and income, identical preferences and identical household responsibility. For example we would expect men and women to exhibit identical commuting behavior. Specifically the household responsibility hypothesis (HRH) in their finding stated that employed women tend to have greater household responsibility. As a result, they face greater time constraints and ultimately choose shorter commutes than employed men, that is in the context of White's theoretical development.

Madden (1981) further noted that women in most cities generally earned lower incomes and worked shorter hours, so it did not pay to commute long distances. But most of all, they worked closer to home because they need to balance work and household responsibilities, and promptly responded to family emergencies. Finding of the research indicated that there was no relationship between the travel distance and women travel safety.

A similar study done by Hanson and Hanson (1981) showed that in the United Kingdom a correlation between the distance travelled by a woman and the need to tend to child care, caring for elderly and domestic responsibilities but not crime. The following Table 1 indicates the distance travelled per person in United Kingdom.

Table 1. Distance travelled per person per year in the United Kingdom by bus, age and gender

		17 - 20 years		21–25 years		26-39 years	
Mode	Year	Male	Female	Male	Female	Male	Female
Local bus	1975/76	1,315	2,033	824	1,026	465	750
	1985/86	1,014	1,228	557	800	293	456
	1994/96	913	1,198	449	620	224	401
Total distance travel	1975/76	11,228	8,594	13,096	8,280	13,424	6,775
	1985/86	9,787	8,939	13,717	9,731	14,709	8,451
	1994/96	11,140	10,172	15,450	11,111	17,831	10,966

Source: UK Department of Environment, Transport and the Regions, National Travel Survey 1994-96, HMSO, London UK (1997)

From the above table, it can be clearly seen that, women age 17- 20 years old in United Kingdom made more trip using local bus than any other group starting from 1975 right until 1996, women outnumber that of man in terms of travelling by bus in United Kingdom. Hanson and Hanson (1981) summarized that this might be due to unique travel characteristics that women had to undertake as compared to a man who normally used the local bus for only working purposes. However, from the above statistic, women are more prone to travel less in the distance than of man. This might not be due to safety reason but more on the reason of multi task journey that women have to go through. So for them the shorter the distance the better it would be. There is still no discussion being made on the reason for shorter travel distance among women is due to the safety factors.

Pazy, Asya and Pintzov (1996), who recognized the changing status of women's careers and the influence of this change has on their commuting patterns, found that single women in an urban area made shorter commutes than married women and had shorter commute times. This statement was further supported by (Al-Kazily, Barnes, & Coontz, 1994; Gordon, Kumar, & Richardson, 1989; Hanson & Johnston, 1985; Rosenbloom, 1994; Rosenbloom & Burns, 1993; Wachs, 1988). There is no discussion on any theory that indicated that single women were more at risk of being the crime victim as compared to married women.

A study conducted by Hamilton (2002) in Sweden indicated that men travelled approximately 71 billion kilometres or 61% of the total kilometres travelled, whereas women travelled 45 billion kilometres or 39 %. Women travelled approximately 19 kilometres less a day than men, and women were making more walking and public transport trips than men. He also indicated that travel distance is not the most influential factors towards the safety issues.

2.3. Time of travel

A considerable amount of literature has been published and researched on time of women's travelling as a factor affecting women's feeling of safe. These studies claimed that women faced higher feeling of fear while travelling after dark due to personal safety reason (British Crime Survey, 1994; Focas, 1989;

Hamilton, 2002; Hanson & Hanson, 1981; Kelly, 1999; Pagano & Robert, 1972; Sarmiento, 1995; Sideris, 2005; Sinha et al, 1990; Victoria Police Crime Survey, 1996)

One of the consistent finding on the reason for higher feeling of fear travelling after dark was because of the high crime occurrence during that period of time (Criminal Department Unit, 2005; Focas, 1989; Levinson, 2002; Pearlstein & Wachs, 1982)

An early finding by Pagano and Robert (1972) had indicated that gradually during the decade, riders would shift their use from the evening off peak hours to 9.00am and 3.00 pm period. Most of the reduction occurred from 3.00 pm to midnight interval was not a coincidental incident. They reported that the decline of a nighttime usage of the public was correlated with both the incidence of serious crime and public perception of unsafe periods.

With this regard, Pearlstein and Wachs (1982) in a study in United States further pointed out that although most crimes on a bus were committed during peak rider ship hours, the rates of occurrence were disproportionately high during the evening that causes high feeling of fear among the passengers.

Another survey such as conducted by Lynch and Atkins (1988) in Southampton stated that the apprehension or fear affected the travel behavior of women. In their study of safety at a bus stop, 16% of those surveyed felt unsafe by day and 35 % at night. The authors concluded that women would avoid putting themselves into what they considered being vulnerable situations, sometimes forgoing travel all together.

In the late 1980s, most researches on women's travelling safety issues found that between 50% to 70% of women were frightened of going out after dark in cities (Atkins, 1989). Focas (1989) on the other hand tried to find an answer towards the feeling of fear travelling after dark in a major city centre in London. He found that more than half of the attacks on the bus passengers occurred on the street (while walking) during the night time, 8% at the bus stop and another 8% in the parks and open space. Focas also carried out a number of investigations into the real time of crime occurrence. The study revealed that one third of the crime in London actually happen between 12.00 noon to 4.00pm, one third between 4.00pm to 7.00pm and one third 7.00pm to 1.00am.

In the mid 1990s, the same consistent findings were found to be on the level of safety if women were to travel after dark where higher feeling of unsafe was reported during that travelling period (British Crime Survey, 1994). The survey also pointed out that one of eight women surveyed said that she felt so unsafe on public transport after dark that they avoided using it. To support the findings, a study by Sinha et al (1990) pointed out that woman who felt more insecure about the transit system exhibited obvious reduction in the night time activity. This avoidance behavior is further confirmed by a finding showing that 63% of women who felt unsafe using the bus alone at night tried to avoid the trip.

In probing the matter further, a study in Southern California by Sarmiento (1995) revealed that woman's work trips were more clustered around the peak, compared to men. However, the study concluded that women tend to avoid traveling after off peak hours due to personal safety reason. The same result was indicated by Kelly (1999) who found that women restricted the places they wanted to go and time they travelled due to their personal safety reason.

A study on time of crime occurrence in Malaysia conducted by Criminal Department Unit (2005), where the same conclusion was obtained where time of travelling indicated the number of crime occurrence. Statistics from Criminal Department Unit (CDU) reported the following:

Table 2. Distance time of crime occurrence in Malaysia for the year 2005

Year	0301-0700	0701-1100	1101-1500	1501-1900	1901-2300	2301-0300
2005	15	113	117	77	166	34
%	2.87	21.65	22.41	14.75	31.8	6.51

Source: Royal Malaysia Police Criminal Department (2005)

Based on Table 2, most crime happened from 7.00pm-11.00pm. This is a common time for returning from work journey. The second highest time where crime occurred was at around 11 am –3.00pm where most of them were going out for lunch. Another critical time where crime occurs on the streets was also when a trip of going to work was concern that is at 7.01am-11am. However, the statistics provided by the CDU might have been more attractive if it considered the feeling of safety by women commuters was considered especially when travelling at different time of the day. Based on all the evidence from the past research, time of women travelling is being considered in this study as the independent variable to be studied.

2.4. Age

Previous research finding into examining age and level of fear by Ferraro and LaGrange (1987), articulated that no relationship has been found between age and fear of crime. They argue that 'fear of crime' is not as serious as in the lives of the elderly as portrayed in the literature and media. Their overview of research findings concluded that elderly people as a group was no 'fearful' of crime than those of other ages. They also contended that the 'fear' of older people might not be associated with criminal acts as such but more due to sign of disorder and lack of community control. It is said that being bothered or intimidated by unruly behaviour from young or disorderly people may be contributing more to an older person's expression of a lack of safety than the crime itself and should not be describe as 'fear of crime'.

To challenge the view, Evan (1995) had attempted to explain that when it came to age, it was customary to report that the elderly was the most afraid, and for many crimes, this situation was true. However, he then mentioned that when it came to crimes like rape, sexual assault and stranger attacks, the younger women tend to be more fearful. The finding from British Crime Survey in 1994, concluded that older women were likely than other respondent to consider that they would be the victims of such crime. Both of the studies were being supported by Joanne (2001) who claimed that the risk of crime victims differed by age. In her main study of women and crime experience, she concluded that although all women were potential victims of rape, sexual assault, gropers, nudging and obscene language, it appeared that some women are more at risk than others. The study also revealed that traditionally young women age between 16 to 24 was most likely to experience rape. Therefore, if no proper security measure was installed to monitor their movement while travelling by public transport especially buses, it was believed that the risk of being the victims was much higher.

Being the least group to be exposed to crime victims, Smith and Torstensson (1997) questioned why "the least victimized by violence was the most fearful of crime (elderly)." They claim this is a "central paradox" in fear of crime literature. The following Table 2.4 explains in detail on the feeling of safe by women from different age group.

Table 3. Proportion of women feeling safe travelling by bus during the day and night by age group

Age group	During the day	At night
16-19	83%	48%
20-54	91%	41%
55-60	86%	36%
Over 60 years	83%	21%
All women	88%	37%

Source: Women on the Move survey (1982)

Women age 20- 54 years were among the group of people who felt safer travelling by bus during the day with 91%. However when travelling period changed, the total percentage of feeling safe dropped by 50 % which indicated that, at night they felt less safe when travelling by bus was concern. Women age 60 and more felt that travelling at night created less safe period of travelling for them. Only teenagers age 16-19 felt that travelling for them at night was fairly safe with the total of 48 %. Overall, all age of women agreed that they felt much safer travelling by bus during the daytime as compared to night trip.

3. Research finding

This research is an empirical study where questionnaire are selected to be used. Is also a quantitative method that is inferential analysis was done to respondent that are taken in the bus stop while their waiting for the bus. The correlation is used to analysis the data collected.

Table 4. Women travel pattern

Women Travelling Pattern	Percentage
Usage of the bus	
Frequently	84.7%
Occasionally	13.7%
Seldom	1.7%
Time OF travelling that Women Will Avoid due to Fear of Crime	
3.01am-7am	70.1%
7.01am-11.00am	15.8%
11.01am-3.00pm	-
3.01pm-7.00pm	-
7.01pm-11.00pm	53.7%
11.01pm-3.00am	88.4%
Usage of Bus After Dark	
Yes	45.8%
No	54.2%

Table 4 shows the trend of women travelling pattern to be studied. The table pointed out the critical aspect of women travelling pattern that potentially affected level of safety. Consistent with the need to travel to work using bus services, the result showed that the majority of the stage bus (84.7%) use the bus frequently. The selection of the frequent users as the respondent in this study could be considered as the most crucial aspect as the frequent users were in a truly good situation of describing the real situation they face every day when travelling by bus was concern.

Table 4 compares the mean score obtain for level of safety indication travelling during the daytime and after dark for a stage bus service. It was apparent from the table that the mean score for travelling during the day and after dark had differences especially in terms of fear level indication. In general, the result indicated that the overall level of fear among current women bus riders was still high especially when travelling after dark was concern.

Table 5. Mean score for level of fear indication when travelling at different time of the day

Women travel time	Stage Bus
Time of travelling :	
Day time	3.291
After dark	9.048

* 0-Not fearful at all; 10-Most fearful

Based on the correlation analysis, the following table summarizes the statistical analysis for the relationship between women's travel plan attributes which consist of "time" and "age" towards the level of safety indication while travelling by bus. The first sets of correlation indicate the relationship between the time of travelling and level of safety indication for stage bus users.

Table 5 indicate the correlation analysis that used to explore the relationship between the time of women travelling and level of safety indication travelling by current bus services. It is apparent from the table that there is a positive correlation between the time of women travelling and level of safety indication ($r = .227$ $p<0.05$), with higher usage of the bus after off peak hours associated with the lower level of safety (unsafe) indication while travelling.

Table 6. Correlation between time of travelling and level of safety indication among women travelers

Control Variables			Level Of safety	Time
None	Level of Safety For Stage Bus Users	Correlation	1	.227
		Significance (2-tailed)		.002
	Time Of Travelling	Correlation	.227	1
		Significance (2-tailed)	.002	

Table 6 indicate the correlation that used to explore the relationship between women's age and level of safety indication travelling by the current stage bus services. It is apparent from the table that there is a negative correlation between women's age and level of safety indication while travelling, with high age of women's travellers associated with higher level of unsafe when travelling using current services.

Table 7. Correlation between age of women travelers and level of safety indication

Control Variables			Level Of safety	Time
None		Correlation	1	-.419
	Level of Safety For Stage Bus Users	Significance (2-tailed)		.000
		Correlation	-.419	1
	Age	Significance (2-tailed)	.000	

4. Conclusion and recommendation

Many studies have focused on the relationship between transport service characteristics and women personal travel pattern towards travel safety from accident point of view. However, less research devoted to the effect of poor public transport supply and its infrastructure and even fewer have linked poor public transport supply and women personal travel pattern towards crime exposure.

The main contribution of this research is the analysis of the relationship between public transport supply and women personal travel pattern towards the travelling safety issues in an urban area. The evidence from the analysis suggested that factors of time and age of women of women travelling identified as the factors that affect women level of safety for a stage bus users. This evidence suggest that an urgent need to invest and implement the safety policy guide of the public transport services, and it's infrastructure to these urban areas facilities especially when there is an increase in the involvement of women in employment sectors.

Another important results of this investigation revealed that factor of 'age' identified as the most significant factors that affect women's level of safety particularly for a stage bus users. These findings stressed that it is necessary to understand the need of different age group towards a safe travel because elderly women above 40's indicates a higher level of fear over the same quality of the public transport services and infrastructure provided to them. This can be accomplished by identifying the travelling needs of elderly women and ensuring that transport operators meet expected standards and better enforcement through a tighter licensing regulation.

More women travel during off peak hours public transport service to meet their employment purposes, it is essential to ensure that a transport service being offer is safe and perceived as safe to them. Apart from that, it is also crucial to design a policy and guideline that respond to real and perceived safety issues face by women since both have the ability to create a constrain in women's activities. Therefore, public transport planers have a responsibility to ensure that all women using bus services can complete their whole journey (from origin to destination), possibly door-to door, without made to feel unsafe.

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